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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PATEL, HARESH N	

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/779,071	SWILDENS, ERIC SVEN-JOHAN	
	Examiner	Art Unit	
	Haresh Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-30 are subject to examination.

Response to Arguments

2. Applicant's arguments filed 1/27/2006, pages 8-14 have been fully considered but they are not persuasive. Therefore, rejection of claims 1-30 is maintained.

Applicant argues (1), limitations rejected under 112 first paragraph, "assigning a virtual IP address to a scheduler", is supported by page 7, lines 4-6, of the specification, i.e., the first item (Single virtual IP address for many Web servers) is supported by all local load balancers. All load balancers publish a Virtual IP (VIP) address to the world and then have many machines which can take traffic for that IP address", hence the rejection should be withdrawn.

The examiner respectfully disagrees in response to applicant's arguments. Contrary to applicant's assertions, the limitations "assigning a virtual IP address to a scheduler", are neither supported by the page 7, lines 4-6, of the specification nor supported by the other portions of the specification containing virtual IP address related information. The additional limitations, assigning the virtual IP address to a particular scheduler that supports other limitations of the claims, for example see claim 1, is not similar to "the first item (Single virtual IP address for many Web servers) is supported by all local load balancers. All load balancers publish a Virtual IP (VIP) address to the world and then have many machines which can take traffic for that IP address", as the specification do not show how an assignment of the virtual IP address to a scheduler is

performed that implements other limitations of the cliams. Hence, the rejection is maintained.

Applicant argues (2), "none of the cited art teach or suggest limitations, all incoming packets from requesting clients destined for the load balancing array are routed through the scheduler" and "Bruck et al., 6,801,949, Rainfinity Inc (Hereinafter Bruck-Rainfinity) does not teach or disclose assigning a virtual IP address to a scheduler that is designated as active scheduler for a load balancing array".

The examiner respectfully disagrees in response to applicant's arguments. The amended (newly presented) limitations, "all incoming packets from requesting clients destined for the load balancing array are routed through the scheduler", is also taught by Zisapel et al., US Publication, 2002/0103846 A1, Aug. 1, 2002, "Load Balancing" (Hereinafter Zisapel-Radware), e.g., LB1 load balancing server also scheduling client requests for LB2 load balancing server, figures 1A – 1C, paragraphs 33 and 34, page 3. Note: the claimed limitations, "all incoming packets from requesting clients", is not limited to all incoming packets belong to all the claimed requesting clients, and not including just one of the requesting clients. The limitations, "incoming packets", is not limited to packets incoming to the load balancing array and/or the scheduler.

In response to applicant's arguments for "assigning a virtual IP address to a scheduler that is designated as active scheduler for a load balancing array", against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re*

Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The limitations are rejected using combine teachings of Zisapel-Radware, Hassett et al., 6173,311, PointCast Inc (Hereinafter Hasett-PointCast) and Bruck-Rainfinity. Bruck-Rainfinity discloses the relied upon limitations i.e., the concept of assigning a virtual IP address to a scheduling object (e.g., col., 36, line 26 – col., 37, line 19) and usage of the virtual IP address (e.g., col., 36, line 26 – col., 37, line 19), as claimed. Further, the claims do not define how the virtual IP address is different than the cited references. The specification of this application, page 24, lines 21 –24, clearly states, "Although the invention is described herein with reference to the preferred embodiment, one skilled in the art will readily appreciate that other applications may be substituted for those set forth herein without departing from the spirit and scope of the present invention. Accordingly, the invention should only be limited by the claims included below". Since, applicant's claims contain broadly claimed subject matter, it clearly reads upon the examiner's interpretation of the claimed subject matter. Therefore, the rejection is maintained.

Response to Amendment

3. The amendment filed 5/6/2005 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: (Note: this rejection is maintained from office action, dated 7/27/2005).

a. addition of limitations, "assigning a virtual IP address to a scheduler", in claims 1 and 16.

Applicant is required to cancel the new matter, to avoid abandonment of this application, in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art to use and/or make the invention.

The specification does not contain subject matter to implement limitations, "assigning a virtual IP address to a scheduler", as cited in claims 1 and 16. Also, page 7, lines 22-30, of the specification, states "single virtual IP address for many Web servers", which has a different scope than the claimed limitations.

Examiner has reviewed the specification and OCR whole document and could not find support for the additional limitations as claimed. (Note: this rejection is maintained from office action, dated 7/27/2005).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel-Radware in view of Hasett-PointCast and Bruck-Rainfinity.

7. As per claims 1 and 16, Zisapel-Radware clearly teaches a process and an apparatus (e.g., figure 1C, abstract) to implement routing packets through a load balancing array of servers across a network in a computer environment (e.g., router balancing load among cluster of servers over the network, figures 1A – 1C, paragraph 33, page 3),

a scheduler that is designated as active scheduler for a load balancing array (e.g., usage of load balancing servers, content servers, S1, Sn, figures 1A – 1C, paragraph 33, page 3);

wherein all incoming packets from requesting clients destined for the load balancing array are routed through said scheduler (e.g., LB1 load balancing server also scheduling client requests for LB2 load balancing server, figures 1A – 1C, paragraphs 33 and 34, page 3);

wherein said scheduler routes and load balances a request packet from a requesting client (e.g., client requests, paragraphs 33 and 34, page 3) to a load balancing server (e.g., LB1 load balancing server also scheduling client requests for LB2 load balancing server, figures 1A – 1C, paragraph 33, page 3);

wherein said load balancing server routes and load balances said request packet to a back end Web server (e.g., LB2 load balancing server balancing load among content servers, S1, Sn, figures 1A – 1C, paragraph 33, page 3);

wherein said back end Web server's response packet to said request packet is sent to said load balancing server (e.g., S1, Sn, content servers supporting client requests through LB2 load balancing server, paragraphs 8-10, page1); and

wherein said load balancing server sends said response packet directly to said client (e.g., LB2 load balancing server forwarding response from content servers, S1, Sn, to the clients, paragraphs 8-10, page1).

Zisapel-Radware also teaches handling of multiple requests for a client (e.g., paragraph 36, page 3).

However, Zisapel-Radware does not specifically mention about a request containing multiple packets and a scheduler supporting multiple clients.

Hasett-PointCast clearly teaches a request containing multiple packets (e.g., abstract, col., 7, lines 5 – 40, col., 3, lines 34 – 65) and a scheduler supporting multiple clients (e.g., abstract, col., 7, lines 5 – 40, col., 3, lines 34 – 65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Zisapel-Radware with Hasett-PointCast in order to facilitate the scheduler to support multiple clients because the requests from the multiple clients would be processed by the scheduler. A request having multiple packets would help the request communicated from a client to the scheduler. The scheduler would receive requests from the clients and would forward the requests so that the requests from the clients are properly handled.

Zisapel-Radware and Hasett-PointCast do not specifically mention about assigning a virtual IP address to scheduling object and usage of the virtual IP address.

Bruck-Rainfinity discloses the concept of assigning a virtual IP address to scheduling object (e.g., col., 36, line 26 – col., 37, line 19) and usage of the virtual IP address (e.g., col., 36, line 26 – col., 37, line 19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Zisapel-Radware and Hasett-PointCast with Bruck-Rainfinity in order to facilitate assigning a virtual IP address to scheduling object and usage of the virtual IP address because the scheduling object would use the virtual IP address for communicating information to a remote device. The assigned virtual IP address would provide a client device to use the object device for processing the request.

8. As per claims 2 and 17, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity teach the claimed limitations as rejected above. Zisapel-Radware also teaches the following:

scheduler is a load balancing server and routes and load balances client requests to itself (e.g., LB1 load balancing server scheduling client requests for itself, figures 1A – 1C, paragraph 33, page 3).

9. Claims 3, 4, 7, 8, 13, 18, 19, 22, 23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity in view of "Official Notice".

10. As per claims 3 and 18, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity teach the claimed limitations as rejected above. Zisapel-Radware also discloses electing a load balancing server (e.g., selection of LB1 or LB2 or LB3, paragraphs 33 and 42) among a plurality of load balancing servers (e.g., LB1 or LB2 or LB3, paragraphs 33 and 42) as a new scheduler (e.g., usage of LB1 or LB2 or LB3 upon availability for new (next) scheduling, paragraphs 33 and 42). (Note: the new scheduler is not limited to replacing another scheduler).

However, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity do not specifically mention about the use of detecting the failure of the server. "Official Notice" is taken that both the concept and advantages of providing to detect the failure of the server is well known and expected in the art. For example, Coile et al., 6,108,300 (Hereinafter Coile) teaches these limitations, e.g., col., 5, lines 3 – 24, e.g., col., 6, lines 40 – 62, col., 8, lines 2 – 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include detecting the failure of the server with the teachings of Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity in order to facilitate handling of system performance in an event of the scheduler failure because upon failure of the scheduler the system would know what client requests are not handled by the failed scheduler. The system would have another server to handle the job of the failed server.

11. As per claims 4 and 19, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity teach the claimed limitations as rejected above. However, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity do not specifically mention about the use of server

detecting the failure of other load balancing servers and the server stops routing packets to any failed load balancing servers. "Official Notice" is taken that both the concept and advantages of providing server detecting the failure of other load balancing servers and the server stops routing packets to any failed load balancing servers, is well known and expected in the art. For example, Coile et al., 6,108,300 (Hereinafter Coile) teaches limitations, "server detecting the failure of other load balancing servers (e.g., col., 12, lines 35 - 54, col., 6, lines 40 – 62, col., 8, lines 2 – 28)" and "the server stops routing packets to any failed load balancing servers/back end Web servers (e.g., col., 12, lines 35 - 54, e.g., col., 6, lines 40 – 62, col., 8, lines 2 – 28)".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include server detecting the failure of other load balancing servers and the server stops routing packets to any failed load balancing servers, with the teachings of Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity in order to facilitate assigning client requests to another load balancing server instead of the failed load balancing server because stopping to route packets to the failed load balancing server would prevent dropping packets. Rerouting to the packets to the other load balancing server will help process the client requests.

12. As per claims 7, 8, 22 and 23, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity teach the claimed limitations as rejected above. However, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity do not specifically mention about the use of server decrypting and encrypting packet for an SSL session. "Official Notice" is taken that both the concept and advantages of providing server decrypting and encrypting

packet for an SSL session, is well known and expected in the art. For example, Hankinson et al., 6,799,202 (Hereinafter Hankinson) teaches limitations, "server decrypting and encrypting packet for SSL session (e.g., col., 3, lines 2 – 65)".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include server decrypting and encrypting packet for an SSL session, with the teachings of Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity in order to facilitate secure communicating between the client and the Web server because for processing and forwarding the packet to the Web server, the load balancing server will decrypt the packet when it receives from the client. The load balancing server will receive the response packet from the Web server, and it will encrypt the response packet before sending to the client. Using well-known SSL session implementation, the web server and the client will have direct secure communication.

13. As per claims 13 and 28, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity teach the claimed limitations as rejected above. However, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity do not specifically mention about the use of detecting and stop routing request packets to failed back end Web servers. "Official Notice" is taken that both the concept and advantages of providing detecting and stop routing request packets to failed back end Web servers is well known and expected in the art. For example, Coile et al., 6,108,300 (Hereinafter Coile) teaches limitations, "server detecting the failure of other load balancing servers (e.g., col., 12, lines 35 - 54, col., 6, lines 40 – 62, col., 8, lines 2 – 28)" and "the server stops routing packets to any failed

load balancing servers/back end Web servers (e.g., col., 12, lines 35 - 54, e.g., col., 6, lines 40 – 62, col., 8, lines 2 – 28)".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include detecting and stop routing request packets to failed back end Web servers with the teachings of Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity in order to facilitate accessing the other web server in an event of the web server failure because upon failure of the web server, other web server would help support the client requests. By stopping to route the packets to the failed web server would help prevent packets from dropping and the other web server would then handle the client requests.

14. Claims 5, 6, 14, 15, 20, 21, 29, 30, are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity in view of Masters 6,374,300 (Hereinafter Masters).

15. As per claims 5, 6, 14, 15, 20, 21, 29, 30, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity teach the claimed limitations as rejected above. However, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity do not specifically mention about the server scheduling sessions to servers based on a cookie or session ID and use of cookie injection to map a client to a specific server.

Masters clearly teaches about the concept of server scheduling sessions to servers based on a cookie or session ID (e.g., abstract, col., 10, lines 8 - 61), and use of cookie injection to map a client to a specific server (e.g., abstract, col., 10, lines 8 - 61, col., 13, lines 1- 24), modify URLs in the HTML page in a packet to serve them from said content

delivery network (e.g., col., 5, lines14 – 61, col., 3, lines 21 - 50), HTML pages that have modified URLs are cached to improve performance (e.g., abstract, col., 10, lines 8 - 61, col., 2, lines 24 – page 4, line 34, col., 7, lines 1 - 16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity with Masters in order to facilitate scheduling based on cookie for persistent connection with the web server because using the cookie the client request can be routed to a previously selected destination web server associated with the client. The client will be able to continue using the same web server support. As per Masters teachings, the cookie information can be manipulated as necessary. Hence, the client will be able to continue communicating with the server in a direct persistent manner.

16. Claims 9-12, 24-27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel-Radware, Hasett-PointCast, Bruck-Rainfinity and "Official Notice" in view of Masters 6,374,300 (Hereinafter Masters).

17. As per claims 9-12, 24-27, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity teach the claimed limitations as rejected above. However, Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity do not specifically mention about the client keeping connection alive with the server. "Official Notice" is taken that both the concept and advantages of the client keeping connection alive with server, is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the client keeping connection alive with the server, with

the teachings of Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity in order to facilitate secure communicating between the client and the Web server because using well-known SSL session implementation, the web server and the client will have direct secure communication as long as the connection between the web server and the client is alive.

Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity do not specifically mention about URL based scheduling of packets and the load balancing server performing hash scheduling of packets. Masters teaches about URL based scheduling of packets (e.g., col., 5, lines 18 – 65), persistent connections in its paths when required (e.g., col., 5, lines 22 – 59, col., 6, lines 8 - 31) and the load balancing server performing hash scheduling of packets (e.g., col., 15, lines 45 – col., 16, lines 21) and uses hash group based persistence to maintain its persistence tables (e.g., col., 5, lines 22 – 59, col., 15, line 57 – col., 16, line 24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Zisapel-Radware, Hasett-PointCast and Bruck-Rainfinity with Masters in order to facilitate secure communicating between the client and the Web server because the URL information in the https packet would provide information of the resource, which the client needs to access. The scheduling with hashing of packets will provide direct secure communication between the web server and the client.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Examiner has cited particular columns and line numbers and/or paragraphs and/or sections and/or page numbers in the reference(s) as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety, as potentially teaching, all or part of the claimed invention, as well as the context of the passage, as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973.

The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 10:00 am to 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Haresh Patel

April 12, 2006

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100